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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,276	11/04/2003	Stacy G. Fishkin	67,108-019; Fishkin 2-2	5003

26096 7590 12/07/2007  
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BIRMINGHAM, MI 48009

EXAMINER
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MASKULINSKI, MICHAEL C

ART UNIT	PAPER NUMBER
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2113

MAIL DATE	DELIVERY MODE
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12/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/701,276

Applicant(s)

FISHKIN ET AL.

Examiner

Michael Maskulinski

Art Unit

2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed, after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-24 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 8, 11 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7, 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**Final Office Action**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3, 6, 8, 11, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Box et al., U.S. Patent 5,787,271.

Referring to claim 1:

- a. In column 6, lines 36-37, Box et al. disclose that the input files comprise a node data file, a span file, and a demand data file (sampling a combinatorial space formed by the plurality of devices to obtain a sample configuration).
- b. In Figure 5A, Box et al. disclose generating an optimization metric based on at least one operating characteristic of said plurality of devices in the sample configuration (Pass 1).
- c. In column 5, lines 1-10, Box et al. disclose that the present invention builds a spares network based on a minimum incremental cost basis. Thus, pre-purchased spare capacity is used before new ones are purchased, even if such re-use requires longer restoration paths. Rather than building nearby spares for every possible cut site, the present invention spreads the restoration away from the cut site in order to efficiently use and re-use every spare purchased. Additional spares are purchased only where exiting spares are insufficient to restore network demand traffic terminated by the severed span (the optimization metric comprising at least a cost restraint and a reliability constraint, each of the

constraints is weighted such that one of the constraints has a priority that is higher than a priority of the other constraint).

d. In Figure 5A, Box et al. disclose comparing the optimization metric with a stored optimization metric corresponding to a previous sample configuration (Pass 2).

e. In Figure 5B, Box et al. disclose selecting one of the sample configuration and the previous sample configuration as the optimum configuration based on the comparing step.

Referring to claim 2, in column 6, lines 36-37, Box et al. disclose that the input files comprise a node data file, a span file, and a demand data file (wherein the plurality of devices comprises a plurality of elements each comprising at least one unit).

Referring to claim 3, in column 4, lines 50-51, Box et al. disclose creating a spares network in addition to the existing network (said at least one unit is selected from a group consisting of a primary unit and a redundant unit).

Referring to claim 6, in column 4, lines 26-27, Box et al. disclose creating an efficient and economical spares network (where the optimization metric of the generation step comprises a cost optimization metric based on a total cost of the plurality of devices).

Referring to claim 8, in column 4, lines 50-51, Box et al. disclose providing a design for a spares network according to a specified level of restoration (wherein the optimization metric calculated by the generating step is a reliability optimization metric based on a total reliability of the plurality of devices).

Referring to claim 11, in column 4, lines 26-27, Box et al. disclose creating an efficient and economical spares network, and in column 4, lines 50-51, Box et al. disclose providing a design for a spares network according to a specified level of restoration (wherein the optimization metric calculated by the generating step is a total optimization metric based on a total cost and a total reliability of the plurality of devices).

Referring to claim 14, in Figure 5A, Box et al. teach storing the optimization metric and the sample configuration if the optimization metric is less than the stored optimization metric.

Referring to claim 15, in Figures 5A and 5B, Box et al. teach repeating the sampling, generating, and comparing steps for a maximum number of iterations, and conducting the selecting step after the maximum number of iterations.

Referring to claim 16, in Figures 5A and 5B, Box et al. teach repeating the sampling, generating, and comparing steps until the optimization metric converges, and conducting the selecting step after the optimization metric converges.

***Allowable Subject Matter***

3. Claims 17-24 are allowed.
4. Claims 4, 5, 7, 9, and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter.

Referring to claim 17, the prior art does not teach or reasonably suggest generating a total optimization metric based on a total cost and a total reliability of the plurality of devices in the sample configuration, wherein the total optimization metric is calculated based on a relative weighting of a cost constraint and a reliability constraint.

Referring to claim 21, the prior art does not teach or reasonably suggest assigning at least one element into each module and distributing any remainder of said plurality of elements among the modules to complete the sample configuration.

Referring to claim 22, the prior art does not teach or reasonably suggest wherein the optimization metric comprises a cost optimization metric based on a total cost of the plurality of devices and incorporates at least one of a modularization benefit, a compression cost overhead reflecting an overhead cost in integrating at least two elements into a module, and a cardinality cost reflecting an overhead cost associated with an individual module.

Referring to claim 23, the prior art does not teach or reasonably suggest wherein the optimization metric of the generating step comprises a reliability optimization metric based on a total reliability of the plurality of devices that is calculated based on a total downtime of the plurality of devices.

Referring to claim 24, the prior art does not teach or reasonably suggest generating an optimization metric comprising a total optimization metric based on at least a total cost and a total reliability of said plurality of devices in the sample configuration, and based on the relative weighting.

***Response to Arguments***

6. Applicant's arguments filed October 2, 2007 have been fully considered but they are not persuasive.

7. On page 8, under the section REMARKS, the applicant argues, "The Box et al. reference does not include using an optimization metric comprising at least a cost restraint and a reliability constraint, each of the constraints is weighted such that one of the constraints has a priority that is higher than a priority of the other constraint. The Examiner respectfully disagrees. In column 5, lines 1-10, Box et al. disclose that the present invention builds a spares network based on a minimum incremental cost basis. Thus, pre-purchased spare capacity is used before new ones are purchased, even if such re-use requires longer restoration paths. Rather than building nearby spares for every possible cut site, the present invention spreads the restoration away from the cut site in order to efficiently use and re-use every spare purchased. Additional spares are purchased only where exiting spares are insufficient to restore network demand traffic terminated by the severed span.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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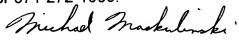
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Maskulinski whose telephone number is 571-272-3649. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on 571-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael Maskulinski  
Primary Examiner



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